

### **III. REMARKS**

United States Serial No. 10/822,189 was filed on April 9, 2004. In view of the remarks set forth herein, Applicants respectfully request reconsideration and allowance of claims 1-19.

#### **Amendment**

Claim 5 has been amended to correct a typographical error; the word "in" has been replaced with the word "is". Applicants submit that this amendment is clerical in nature and does not affect the scope of the claim.

#### **35 U.S.C. §103(a) Rejections**

Claims 1-5, 9-16 and 19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 7,077,159 ("Reimer") in view of U.S. Patent No. 6,375,413 ("Stones"). Applicants respectfully traverse this rejection.

To establish a prima facie case of obviousness under 35 U.S.C. §103(a) there must be (1) a suggestion or motivation to modify a reference, (2) a reasonable expectation of success, and (3) the modification of the reference must teach or suggest all claimed limitations. *In re Vaeck*, 947 F.2d 488 (Fed.Cir. 1991).

Applicants respectfully submit that the combination of Reimer and Stones fails at least the third requirement of *In re Vaeck* with respect to claim 1. Claim 1 recites the feature of "flanges having helical structures selectively provided on said first and said second concentric cylinders, said flange-like cylinder, and said cylinder concentrically located relative said flange". Original Specification, Claim 1. That is, claim 1 recites helical structures on four different cylindrical structures. Neither Reimer nor Stones disclose helical structures on said flange-like cylinder. Neither Reimer nor Stones discloses helical structures on said cylinder concentrically located relative to said flange.

To emphasize this distinction, the Office Action alleges that “Stones discloses... flanges (14, 13) with helical structures mounted thereon...” Office Action mailed June 22, 2007, page 2, lines 14-16. That is, the Office Action alleges that Stones discloses helical structures on two of the four different cylindrical structures which are recited in claim 1. Applicants respectfully submit that this allegation, whether true or not, is not sufficient to teach all of the claimed features because it does not teach helical structures on the first and second concentric cylinders as is recited in claim 1.

Because the combination of Reimer and Stones does not teach all of the claimed features of claim 1, the Office Action does not establish a prima facie case of obviousness under 35 U.S.C. §103(a) with respect to claim 1. Because claims 2-4 include all of the features of claim 1, the Office Action does not establish a prima facie case of obviousness under 35 U.S.C. §103(a) with respect to claims 2-4. Applicants respectfully request that the rejection of claims 1-4 be withdrawn.

Claims 1 and 5 both disclose a mating system including a flange-like cylinder. Original Specification, Claim 1; Original Specification, Claim 5. The combination of Reimer and Stones fails at least the third requirement of *In re Vaeck* with respect to claims 1 and 5 for failure to disclose a mating system which includes a flange-like cylinder. Stones does not include any sort of mating system explicitly or implicitly and therefore cannot render a mating system obvious. As alleged in the Office Action, Reimer discloses that the pump may be directly connected to and abutting the load lock chamber. Reimer, column 6, lines 51-52. Applicants submit that this latter disclosure is not sufficient to disclose all of the claimed features in claim 1 for failure to disclose *a mating system incorporating a flange-like cylinder*.

Firstly, Reimer never discloses a mating system. Secondly, assuming for the sake of discussion only that a mating system of some type might be implied to one of ordinary skill in the art by the “directly connected” disclosure of record in the Office Action, the presence of a flange-like cylinder is certainly not stated explicitly and is not an obvious implication of “directly connected”. Applicants submit that the flange-like cylinder must be interpreted in light of the specification; it is “supported relative to the load-lock housing by a support plate”

and is "oriented axially with respect to the [pump] shaft". Original Specification, Page 6, lines 5-6; Original Specification, Page 8, lines 1-2. Applicants submit that a direct connection does not require a "flange-like cylinder" such that disclosure of "directly connected" is not enough to make this leap obvious to one of ordinary skill in the art.

Since the disclosure of, *inter alia*, a flange-like cylinder is missing from Reimer, Reimer does not disclose a mating system including a flange-like cylinder. Since neither Reimer nor Stones discloses a mating system including a flange-like cylinder, Applicants submit that this feature cannot be disclosed by their combination and is not obvious in light of the combination of Reimer and Stones.

Because the cited art does not teach all of the claimed features of either claim 1 or 5, the Office Action does not establish a prima facie case of obviousness under 35 U.S.C. §103(a) with respect to either claim 1 or 5. Because claims 2-4 include all of the features of claim 1, the Office Action does not establish a prima facie case of obviousness under 35 U.S.C. §103(a) with respect to claims 2-4. Similarly, because claims 9-16 and 19 include all of the features of claim 5, the Office Action does not establish a prima facie case of obviousness under 35 U.S.C. §103(a) with respect to claims 9-16 and 19. Applicants respectfully request that the rejection of claims 1-5, 9-16 and 19 be withdrawn.

Also, citation of Stones as part of a combination that is alleged to make the features recited in claims 1-4 obvious is improper, because Stones teaches against the inclusion of helical structures on the rotor in post-primary molecular drag Holweck stages ("Holweck"). Stones teaches that a Holweck stage incorporates helical structures "attached to either a surface of a rotation or of a stationary cylinder". Stones, column 2, lines 8-9. Stones teaches that "in accordance with the invention... the helical flange...is attached either to the stationary or to the rotating cylinder wherein the molecular drag stage closest to the pump inlet has the threaded flange on its rotating cylinder and *the subsequent molecular drag stage or stages has the threaded flange on the stationary cylinder*". Stones, column 2, lines 25-36; emphasis added. Stones teaches against the inclusion of secondary stages having helical flanges on the rotor. This disclosure is in direct contradiction to claims 1-4 because claims 1-4 recite helical

structures...on...said second concentric cylinder; the second concentric cylinder being a rotor in a post-primary Holweck molecular drag stage.

Because Stones teaches against the claimed features of claim 1, and because Stones must be considered in its entirety, inclusion of Stones with other references forms a combination which teaches against claim 1. A combination including Stones fails to suggest the presently claimed subject matter. Applicants respectfully request that the rejection of claims 1-4 be withdrawn.

Claims 6-8, 17 and 18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 7,077,159 ("Reimer") in view of U.S. Patent No. 6,375,413 ("Stones") and further in view of U.S. Patent No. 6,545,508 [sic: 6,454,508] ("Toshima"). Applicants respectfully traverse this rejection.

Applicants respectfully submit that the combination of Reimer, Stones, and Toshima fails at least the third requirement of *In re Vaeck* with respect to claim 5. Because all of the claims 6-8, 17 and 18, depend directly or indirectly upon claim 5, the failure of the combination of Reimer, Stones, and Toshima to disclose all of the features of claim 5 is sufficient to rebut a prima facie case of obviousness under 35 U.S.C. §103(a) with respect to dependant claims 6-8, 17 and 18.

As noted above, Reimer and Stones in combination do not disclose the feature of a flange-like cylinder in claim 5. Toshima does not remedy this failing; Toshima also fails to disclose a flange-like cylinder. Toshima does disclose a vacuum pump coupled to the vacuum processing chamber but, as discussed with respect to Reimer, this disclosure is not sufficient to render obvious the recited flange-like cylinder or the recited mating system which includes a flange-like cylinder. Because none of Stones, Reimer, or Toshima disclose a flange-like cylinder, the feature of a flange-like cylinder cannot be obvious from the combination of Reimer, Stones, and Toshima.

Because the combination of Reimer, Stones, and Toshima does not teach all of the claimed features of claim 5, the Office Action does not establish a prima facie case of

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obviousness under 35 U.S.C. §103(a) with respect to claim 5. Because claims 6-8, 17 and 18 include all of the features of claim 5, the Office Action does not establish a prima facie case of obviousness under 35 U.S.C. §103(a) with respect to claims 6-8, 17 and 18. Applicants respectfully request that the rejection of claims 6-8, 17 and 18 be withdrawn.

Conclusions

In view of the remarks set forth above, Applicants respectfully request reconsideration of the application, withdrawal of the 35 U.S.C. §103(a) rejections, and further request that a Formal Notice of Allowance be issued for claims 1-19. Should the Examiner have any questions regarding the remarks set forth herein, Applicants' undersigned attorney would welcome a telephone call.

Respectfully submitted,



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